TC 3.20 ENVIRONMENTAL PERFORMANCE SPECIFICATION

3.20.01 General

The Design-Build Team (DBT) shall conduct its design and construction activities in accordance with these specifications such that no action or inaction on the part of the DBT shall result in non-compliance with the requirements of the necessary permits and approvals required by the Project.

3.20.01.01 General Environmental Philosophy

The Upper Little Patuxent Stream Restoration Project passes through an area of diverse environmental, community, and cultural resources. Protection of these resources is of paramount importance. The philosophy followed by the Maryland State Highway Administration (Administration) during the development of the maximum limits of disturbance plan was to incorporate environmental stewardship measures and avoid and minimize impacts to the natural and forest areas, to the greatest extent feasible and practical. The DBT shall continue this environmentally sensitive approach and philosophy during the preparation of final design plans and through Project implementation.

3.20.02 Standards and References

The DBT shall design and implement Environmental requirements in accordance with the relevant requirements of the standards listed by priority in Table 1 unless otherwise stipulated in this specification. Standards specifically cited in the body of this specification establish requirements that shall have precedence over all others. Should the requirements in any Standard below conflict with those in another, the Standard listed with the higher priority shall govern. It is the DBT's responsibility to obtain clarification for any unresolved or perceived ambiguity prior to proceeding with design or construction.

Appropriate professional standards and regulations shall be utilized for design and construction implementation of all commitments, considerations, permit conditions and approval requirements.

Standards shall include, but are not limited to the following:

TABLE 1
STANDARDS FOR ENVIRONMENTAL

Priority	*Author or Agency*	*Title*
1		Section 106 of the National Historical Preservation Act (16 USC § 470f)
2		Section 4(f) of the US Department of Transportation Act (23 USC § 138)
3		Code of Federal Regulations (CFR)
4		Code of Maryland Regulations (COMAR)
5	MDE/USACE	MDSPGP-4 and Nationwide #27 (USACE)
6		Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983 and successors)
7		Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994)
8		Standards and Guidelines for Architectural and Historical Investigations in Maryland (Maryland Historical Trust, 2000)
9		Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites, ACFIP 1999 (64 FR 27085-27087)
10		Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Past 68)
11	SHA	Standard Specifications for Construction and Materials
12	SHA	Book of Standards for Highways and Incidental Structures and Traffic Control Applications
13	DNR	State Forest Conservation Technical Manual, 3rd edition, 1997 by Maryland Department

3.20.03 Administration's Environmental Roles and Responsibilities

The Administration has conducted extensive coordination with various environmental and regulatory agencies and the public. At this time, an Independent Environmental Monitor (IEM) is not required by the Administration and is pending upon the conditional permit approval. However, if there are any changes to the design and/or construction activities that would affect permit conditions or require a modification approval from the regulatory agencies, an IEM may be required by the Administration and/or USACE and MDE. In that case, the Administration will provide an IEM, on behalf of the USACE and MDE, who will work with the DBT to confirm that the DBT's plans and construction methods are in compliance and that all regulatory permit conditions and commitments are met. The Independent Environmental Monitor will:

A. Review plans as they are developed;

B. Review the DBT's environmental compliance implementation;

C. Notify the DBT's of deficiencies in the compliance with the commitments, considerations, permits and approvals; and

D. Coordinate and attend any meetings involving resource or regulatory agencies.

3.20.04 Design-Build Team's Responsibilities

The DBT shall be responsible for compliance with the permit conditions throughout the design and construction of the Project. The DBT shall develop an Environmental Compliance plan as outlined below. The DBT shall demonstrate compliance by producing a Compliance Report bi-weekly, which tracks and confirms compliance with each commitment pertaining to the construction of the Project, and also tracks impacts to wetlands and Waters of the US. The checklist and memorandum shall be submitted to the Administration within 3 days of the 15th and 30th of each month.

Agency review and approval are required for regulated resource impacts. The DBT shall deliver submittals for regulatory agencies approval to the Administration for review and approval prior to submitting to MDE. The Administration will review and comment on the DBT plans and, once satisfied that the plans will meet regulatory agencies' requirements, the DBT will coordinate with MDE to obtain formal approval. It is expected that 30-day public notice is required as part of the permitting process.

3.20.04.01 Environmental Compliance Plan

Environmental Compliance Plan, which includes, as a minimum, the following items, listed below, shall be submitted to the Administration for review and approval prior to the submission of any design plans:

1. Environmental Compliance Implementation Plan of how the DBT's will achieve full compliance with the environmental commitments, considerations, permit conditions, and approval requirements for design and construction,
2. Avoidance/Minimization Plan of how and where the DBT's environmental compliance team will further avoid and/or minimize impacts to forests, wetlands and waters of the US,
3. Environmental Team Processes, Structure, Organization narrative and organization chart identifying key environmental compliance team members under the Environmental Manager.
4. A Wildlife Management Plan indicating how impacts to animals (box turtles, fish and amphibians) will be minimized, including relocating animals and restricting access to the construction area.
5. Water Quality Monitoring Plan that identifies how and where the DBT will monitor water quality at the upstream and downstream limit of the stream within the Project;
6. Spill Prevention Control and Countermeasures Plan (SPCC) and Stormwater Pollution Prevention Plan in accordance with CFR and COMAR;
7. Hazardous Materials Plan;
8. Access and Mobility Plan;
9. Environmental Communication, Emergency Response and Risk Management Plan.
10. Close-out commitment/permit conditions reports for design, construction and post construction

3.20.05 Permits and Approvals

The Administration will be relying on the DBT to achieve and maintain commitments and permits through a strong Environmental Compliance Plan and partnering with the Administration. The DBT is encouraged to consider environmental stewardship measures that exceed those in the standards and permits, while considering reasonable cost and practicality.

A. As part of this RFP, the Administration is providing the following permits and approvals based on the proposed activities:

1) Conditional State MDSPGP-4 (MDE) and Nationwide #27 (USACE)
2) Notice of Intent (NOI)

B. The DBT shall obtain the following permits and/or approvals:

1) Final Erosion and Sediment Control Approval (from MDE)
2) Modifications to the Conditional State MDSPGP-4 (MDE) and Nationwide #27 (USACE) as described in 3.20.06.
3) National Pollutant Discharge Eliminations Systems (NPDES) (from MDE), if necessary
4) Forest Conservation Act Approvals
5) Water Appropriations permits (from MDE), if necessary
6) Fish collection permit for capturing and relocation fish with sampling equipment (from DNR), if necessary
7) Wildlife collection permits for capturing and relocation wildlife (from DNR), if necessary

All other approvals, permits and licenses, and pay all charges, fees and taxes, and give notices when necessary or appropriate for the implementation of the Project beyond those obtained by the Administration. This includes but is not limited to approvals for on or off-site staging, stockpiling areas, disposal sites and borrows pits.

3.20.06 Permit Modifications and Approvals

The DBT shall obtain approvals from the Administration prior to requesting from the regulatory agencies for any design and/or construction activities that affect any permit conditions and would require a modification approval.

The DBT shall not alter the Limit of Disturbance (LOD) in such a manner that increases or creates new impacts to forest, cultural resources, parkland, wetland, wetland buffer, waterway, or floodplain compared to those impacts which were authorized by the permits, illustrated in the Access and Maximum Limit of Disturbance Plan and defined in the Joint Permit Application impact plates and tables.

If the DBT determines that changes to impacts to any regulated resource are to be considered through design and/or construction, the DBT shall submit to the Administration for review and approval prior to the DBT obtaining the permits, approvals or modifications from the regulatory agencies. Request for modification to the permits listed shall be accompanied by documentation provided by the DBT to demonstrate that there is no practical alternative. Mitigation required with approval of modifications shall be the responsibility of the DBT at no additional cost to the Administration.

All conditions in the permits shall be adhered to unless modifications are accepted and approved by the Administration and the regulatory agencies.

Delays, including any public notice periods, due to permit modification approval for permits listed in TC Section-3.20.05, requested by the DBT, will not result in additional costs to the Administration nor will the Contract be extended.

3.20.06.01 National Environmental Policy Act (NEPA) Reevaluation Process

Modifications and/or design changes proposed by the DBT, which occur inside or outside of the RFP limits of disturbance, such as shifts in access roads, staging areas, etc., shall be reviewed for impacts by the DBT, including impacts to the natural, social and cultural environments. In addition, the reevaluation process is triggered by the following activities:

A) Change in scope or design,
B) Change in the limits of disturbance,
C) Change in surrounding environment,
D) New information becomes available,
E) Change that occurs outside of the planning area evaluated in the NEPA documentation
F) Final Design review, and
G) Changes in applicable laws and regulations.

The DBT shall provide all the information needed such as narratives and figures to SHA prior to construction for any of the items identified above and prior to initiation of construction for the affected Design Unit. The SHA will prepare the NEPA documentation based on the information provided by the DBT. The Administration will coordinate approvals with the regulatory agencies and FHWA as necessary. Delays due to reevaluation approval for design changes, requested by the DBT, will not result in additional costs to the Administration nor will the Contract be extended. The step by step process for Reevaluation for design changes is described below.

If the Design Builder proposes a design change that is outside of the LOD the following is the step by step process to obtain approval:

1. DBT determines a design change is warranted
2. DBT environmental staff conducts a quick review to determine if any environmental, social or cultural impacts will occur due to the change
3. DBT presents information to the SHA Project Engineer and SHA Environmental Manager
4. SHA Environmental Manager conditionally approves the change
5. DBT submits information such as narrative and figures to SHA
6. SHA Project Engineer conditionally approves the change
7. SHA Environmental Manager determines specific agency involvement
8. SHA Environmental Manager prepares a Reevaluation and sends documentation/letters as required to regulatory agencies (such as MHT letter, permit modification, etc ...)
   a. Permit modification (signed and mailed within 1 week of DBT submission)
   b. MHT concurrence (signed and mailed within 2-4 weeks of DBT submission depending on the extent of the resource) (concurrence obtained within 30 days
   c. Rare Threatened or Endangered (RTE) responses (typically takes 30 days to receive responses for DNR and FWS)
9. Obtain all agency approvals, (1-2 months depending on the complexity of the change)
10. SHA approves the Reevaluation

3.20.07 Natural Resources

3.20.07.01 Groundwater

The DBT shall be responsible for design measures that maintain and discharge natural groundwater flows and seeps associated with waters of the US and wetlands.

The DBT shall provide protective measures at all activities adjacent to non impacted or temporarily impacted wetlands to ensure that the source of hydrology to that wetland is preserved. If it is determined that the wetland has been altered hydrologically, it will be considered an additional impact, for which the DBT shall be responsible for providing permit modification documentation as well as mitigation at the designated ratios, per COMAR, for the impacts.

Within one year of the completion of the construction, an inspection will be conducted by the Administration and the regulatory agencies to determine whether any remnant wetlands or temporarily impacted wetlands have lost their hydrology. If it is determined that remnant or temporarily impacted wetlands are no longer functioning as a jurisdictional wetland, the DBT shall be responsible for costs associated with the mitigation required. Mitigation ratios for the lost wetlands shall be in accordance with COMAR.

3.20.07.02 Surface Water

For details on Erosion and Sediment Control and Stormwater Management, see the Drainage, Stormwater Management, and Erosion & Sediment Control Performance Specification.

The DBT shall not discharge or allow the release of any sediment laden construction water unless properly treated. The DBT shall obtain Administration approval of all dewatering operations prior to pumping and discharge. Water to be pumped and discharged shall be in conformance with the COMAR Standards.

If construction discharges exceed water quality standards identified in COMAR, the DBT shall immediately notify the Administration and resolve any Project related deficiencies within 24 hours. The Administration will request spot-check inspections at any time to verify compliance.

3.20.07.03 Aquatic Biota

The Design-Build Team shall:

A. Conduct all work so as to avoid/minimize fish mortality from both construction related water quality impairment and in-stream activities. The DBT shall notify the Administration 48 hours prior to the commencement of any stream dewatering or other in-stream activities.
B. Comply with all water quality standards stated in the COMAR for the protection of aquatic biota.
C. Conduct all in-stream work in compliance with the Maryland mandated stream closure period for the designated use of stream as stated in the MDE Water Quality Certification. Temporary crossings, and any riprap placed shall be constructed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to temporarily impound water.

3.20.07.04 Wetlands and Waters of the US

Direct impacts to wetlands and waterways are anticipated to occur under the Project. The impact plates and table in the Joint Permit Application present the total impacts permitted for the Upper Little Patuxent Stream Restoration Project. All wetlands and waterways were identified, delineated and surveyed within the Project. Surveyed boundaries of waterways and wetlands are depicted on the Access and Maximum Limits of Disturbance Plan.

See Contract Provisions CP –Occupying Wetlands/Waterways and Best Management Practices for Work in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-Year Floodplains

3.20.07.04.01 Stream, Wetland and Floodplain Restoration Efforts

Stream impacts shall be avoided and/or minimized to the greatest extent possible. The restoration plan for stream impacts shall include but are not limited to the following elements:

A) Removal of all construction and temporary fill material;
B) De-consolidation and/or scarification of compacted soils;
C) Replacement of topsoil and/or organic matter lost to erosion and sediment control measures;
D) Re-establishment of grades to preconstruction conditions;
E) Removal of temporary stream crossings and E/S controls;
F) Restoration of stream banks, floodplain, wetlands and buffer with woody vegetation;
G) Replant any area within 30 feet of a stream bank that was disturbed temporarily, and that was vegetated pre-construction, with native vegetation similar to pre-construction species composition, with the exception of underground utility corridors.

Monitoring by the DBT to ensure successful restoration of temporary impacts will continue for one year following the restoration effort. Additional remediation efforts shall be implemented by the DBT if it is determined necessary by the Administration, after one year. The DBT shall be responsible to mitigate for the lost resource if remediation does not prove successful one year after the remediation efforts were implemented.

3.20.07.04.02 Avoidance and Minimization

The DBT shall focus its efforts to minimize impacts to trees, wetlands, waterways, floodplains, in all areas of the Project, especially sensitive areas. Engineering designs shall continue to emphasize avoidance and minimization of impacts as the feasibility and effectiveness, such as reducing the construction access impact area, minimizing staging and stockpile area, and minimization of tree removal and clearing.

3.20.07.04.03 Wetland and/or Waterway Impact Reduction Incentive

N/A

3.20.07.05 Forests

Prior to performing any ground disturbing work, the DBT shall be responsible for obtaining Forest Conservation Act approval from Maryland Department of Natural Resources (DNR). This includes, but not limited to, the preparation of Forest Conservation Plan and supporting documents.

3.20.07.05.01 Forest Avoidance and Minimization

Direct impacts to forest are anticipated to occur under the Project. Boundaries of forests are depicted on the Forest Stand Delineation (FSD). The DBT is responsible for performing all tree preservation measures in accordance with Section 120-Tree Preservation of the Standard Specifications for Construction and Materials. Every reasonable effort shall be made by the DBT to minimize the cutting or clearing of trees. Only the minimum number of trees may be cut, and sound design practices shall be utilized.

Specimen trees (trees greater than 30" diameter at breast height measured 4.5' above the ground) were identified, evaluated and are depicted on the FSD. The DBT shall avoid as many specimen trees as possible without affecting resources with equal or greater regulatory protection. As the design advances, it may be found that specimen trees are located near the outer edge of the required LOD/ROW or just outside the LOD/ROW. If this condition exists, the DBT shall coordinate with the DNR to mark and provide a buffer for any such tree to avoid its removal during clearing and grubbing activities. An adequate buffer is defined as the critical root zone (drip line). It is the responsibility of the DBT to obtain any variances to the FCP to impact specimen trees as necessary.

3.20.07.05.02 Limit of Disturbance Reduction Incentive

The Design-Build Team is advised upon final acceptance of work and completion of as-built plans, the DBT will be provided additional compensation for any net reduction to the Limits of Disturbance from what was shown on the Access and Maximum Limits of Disturbance Plan. The DBT will develop a Forest Impact Plan that shows the differences in the LOD between the Access and Limits of Disturbance Plan and the final LOD from as-built plans as a basis of the incentive disbursement. The incentive will be paid at $15,000 per 0.10 acre saved in increments of 0.10 acres, with a maximum compensation of $45,000.

3.20.07.05.03 Forest Mitigation

Reforestation required for the project's impacts within the Access and Limits of Disturbance Plan will be mitigated off-site by the Administration in accordance with the Forest Conservation Act requirements. However, mitigation shall be the responsibility of the DBT for any additional impacts proposed beyond the LOD as shown on the Access and Limits of Disturbance Plan. This mitigation may include a site search, agency reviews and approvals, design, and obtaining right of way and construction. If available and compensation is agreed upon, the Administration may allow the DBT to use excess mitigation at the approved mitigation site.

Land disturbed by construction activities within the LOD shown on the Access and Limit of Disturbance Plan shall be revegetated as soon as practical after construction is completed in accordance with the Drainage, Stormwater Management, and Erosion & Sediment Control and Planting & Landscape Architectural Performance Specifications.

3.20.07.05.04 Forest Impact Modification

Changes to the forest impacts shown on the Access and Maximum Limits of Disturbance Plan must be approved by the Administration. The DBT shall prepare and document the request for modifications for approval by the Administration prior to the DBT submitting to DNR for approval of impacts greater than those shown in the Access and Maximum Limits of Disturbance Plan.

The DBT shall request a field review with the Administration and provide the Administration with justification if additional trees are requested to be removed. The DBT shall be responsible for gaining any modification approval(s) from DNR at no additional cost to the Administration.

3.20.07.06 Terrestrial Wildlife

3.20.07.06.01 Rare, Threatened and Endangered Species (RTE)

No federally listed rare, threatened, or endangered (RTE) species are anticipated to be directly impacted by construction of the Project. However, according to Maryland DNR, Heritage Service, the forested areas within this project area contain Forest Interior Dwelling Bird species habitat (FIDS). The DBT should make every effort to avoid clearing operation in interior forest habitat, if possible, from April 1 to August 31 of any year.

3.20.07.07 Cultural Resources

Except where otherwise noted below, the Administration will be responsible for conducting all cultural resources activities. These activities will include all historic and

archaeological testing and data recovery, coordination with the Administration staff and consultation with all federal, state and local historic preservation agencies and public parties, including affected landowners. SHA has carried out a Phase I Archeological Survey in accordance with Section 106 of the National Historic Preservation Act (NHPA) regulations (36 CFR 800), and has completed all necessary coordination with the Maryland Historic Trust (MHT) and the Maryland State Historic Preservation Officer (SHPO). It has been determined that the project will not impact any architectural or archeological resources.

Unauthorized Project Impacts are prohibited;

A. Material changes to the stream alignment that result in impact beyond those in the Access and Maximum Limits of Disturbance Plan will not be allowed without the prior written consent of the Administration;

B. Proposed changes shall be supported by the necessary investigations, documentation, and submittals needed for these approvals by applicable resource management agencies; and

C. Time and cost implications resulting from design changes shall be solely borne by the DBT.

3.20.07.07.01 Work Area Access During Design-Build Activities

The DBT shall provide the Administration access to the work site to conduct any cultural resources field investigations as needed. The DBT shall be responsible for coordinating an access plan that supports the timely completion of the required investigations. The Administration will make every effort to avoid or minimize restriction of construction activities.

It is not anticipated that archeological resources are present within the area within the LOD shown on the Access and Maximum Limits of Disturbance Plan based on the negative results of prior studies; however, should such resources be encountered during Design-Build activities, the procedures described in 3.20.07.07.01.01 will be followed.

3.20.07.07.01.01 Unanticipated Discoveries of Archeological Resources During Design-Build Activities

In the event that previously unidentified archeological resources are discovered during ground disturbing activities, the DBT shall immediately notify the Administration's Project Engineer, and shall immediately halt construction work involving subsurface disturbance in the area of the archeological resource, and in the surrounding area where further subsurface remains can be expected to occur. The Administration's Project Engineer shall contact Administration archeologist Dr. Julie Schablitsky (410-545-8870), Assistant Division Chief of the

Environmental Planning Division, who shall notify the MD SHPO of the discovery.

The Administration and the MD SHPO, or an archeologist approved by them, shall immediately inspect the work site and determine the area and nature of the archeological resource. Following this inspection, construction may resume in the area outside the archeological resource as defined by the Administration and the MD SHPO.

Within no more than three working days of the original notification of discovery, the Administration, in conjunction with the MD SHPO, shall determine the National Register eligibility of the resource. If the resource is determined eligible for the National Register, the Administration shall prepare a plan for its avoidance, protection, recovery, of destruction without recovery. Such a plan shall be approved by the MD SHPO prior to implementation.

Work in the affected area shall not proceed until either:

- The development and implementation of appropriate data recovery or other recommended mitigation measures, or
- The determination is made that the located remains are not eligible for inclusion on the National Register.

3.20.07.08 Environmental Protection, Health and Safety

A. The DBT shall prepare and implement a plan to ensure the compliant management, handling, transportation and disposal of contaminated soil and/or groundwater encountered during construction, as well as all hazardous materials and wastes belonging to, or generated by, the DBT.

B. The plan shall address worker health and safety in accordance with applicable federal, state, and local regulations.

C. The plan shall provide procedures for the management, handling, transportation, and disposal of waste materials, including demolition debris and contaminated soils and/or groundwater, encountered, or generated by, the DBT at the project location. These procedures shall be written in accordance with applicable federal, state, and local regulations**.**

D. The plan shall address spill prevention and include procedures for spill response. All personnel participating in construction activities must be aware of this plan and be prepared to execute the spill response procedures. The Contractor shall provide the equipment (e.g. personal protective equipment, absorbent material / booms) necessary to execute the spill response procedures in the event that a spill is encountered.

E. In the event of a fuel or oil spill the DBT is alerted to the MDE's Land Management Administration's, Oil Control Program website, where they maintain a list of Oil Spill Contractors and outline notification and remedial procedures in their 'Plan for Notification, Containment and Clean-up of Oil Spills.

3.20.07.09 Construction Access and Mobility Plan

The DBT shall diligently work to minimize impact upon the local environment and community. The DBT shall prepare an Access and Mobility Plan depicting major haul routes and access points. This plan shall include potential material staging areas, truck staging areas, and access routes through the Project limits. All documentation and/or permitting for off-site areas shall be the responsibility of the DBT. The DBT shall prevent the tracking of sediment onto private and public roads and shall ensure that any sediment laden runoff is controlled to prevent entry into streams and wetlands. The DBT shall prevent fugitive dust and quickly resolve dust and air quality related issues during construction.

3.20.07.09.01 Tracking of Sediment

The DBT shall implement means to reduce tracking of sediment such as:

A. Elongated and widened stabilized construction entrances;
B. Use of wash racks;
C. Use of street cleaning equipment;
D. Increased maintenance of entrances

3.20.08 Project Close-out Submittals

The DBT shall provide the following:

A. Surveyed as-built 22x34 plans of post construction conditions in the same format as the Access and Maximum Limits of Disturbance plan and the revised impact plates and tables that were included in the Joint State/Federal Nontidal Wetlands and Waterways Permit application.
B. Forest Impact Plans - This plan shall show the differences in the LOD between the Access and Limits of Disturbance Plan and the final LOD from as-built plans.
C. Close-out commitment/permit conditions reports for design, construction and post construction
D. Final Environmental Compliance Report
E. Post construction, the DBT shall provide to the Administration one set of photographs of the restored stream reach condition from established photographic stations along with an indication of photo direction on a set of as-built plans. Stations will be placed as necessary to document the condition of the left and right banks throughout the restored reach and the condition of all constructed structures within the stream reach.